



# HexWeb® ACG® Honeycomb

## Aluminum Commercial Grade

### Product Data

#### Description

HexWeb® Aluminum Commercial Grade honeycomb is made from 3000 series aluminum alloy foil. An organic coating is applied to the foil which provides excellent protection against corrosive atmospheres. Five cell sizes and densities are available. The honeycomb is manufactured by bonding together sheets of aluminum foil which are expanded to form a cellular honeycomb configuration. The node bond adhesive is a thermosetting type, cured under heat and pressure with the honeycomb in the unexpanded or HOBE® (Honeycomb Before Expansion) condition. Slices are cut from the unexpanded material to specified thickness, or cell depth, and then expanded to final configuration.

The honeycomb can be supplied either expanded or in HOBE slices. Any sheet thickness between 0.125 and 20 inches can be provided. The aluminum substrate can be perforated so that all cells will be vented in a slice as thin as 0.187 inches. The perforations of the HexWeb® ACG® foil allow outgassing of the adhesives used to bond panel facings. Nonperforated honeycomb is also available.

#### Features

- Low cost
- High structural strength/low weight
- Corrosion resistant

#### Applications

HexWeb® ACG® is a commercial grade honeycomb core offering industrial designers, at relatively low cost, the advantages of an all-metal honeycomb with long service life and resistance to fungus, moisture, and temperature. Uses include industrial tooling panels, architectural panels, shelving, storage tank covers, building walls, table and countertops.

#### Special Products/Custom Processing

HexWeb® Aluminum Commercial Grade honeycomb can be provided machined or formed into various shapes. This can include edge chamfering, simple and complex taper cuts, and other special machined configurations. HexWeb® ACG® can be bonded to a variety of facing materials to form flat sandwich panels. Contact plant for honeycomb that is required to meet energy absorption strength specifications.

#### Standard Dimensions

Hexcel's HexWeb® Aluminum Commercial Grade materials are available in the following standard size:

Unexpanded L (HOBE)	Expanded Dimensions	Nominal Sq. Ft. Per Sheet
66 in ± 1 in	48 in + 2 in – 0 in L x 96 in + 4 in – 0 in W	32

#### Type Designation

HexWeb® ACG honeycomb is designated as follows:

Material – Cell Size – Density – Perforated

Example:

**ACG – 3/8 – 3.3P**

Where:

**ACG** – designates Aluminum Commercial Grade honeycomb type

**3/8** – is the cell size in inches

**3.3** – is the nominal density in pounds per cubic foot

**P** – indicates cell walls are perforated

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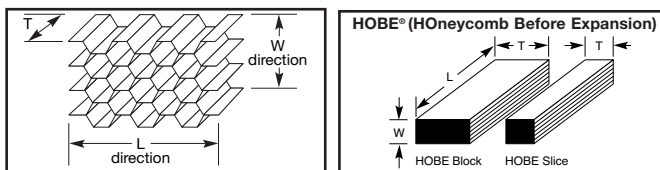
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## Dimensional Nomenclature

- T** = Thickness, or cell depth
- L** = Ribbon direction, or longitudinal direction
- W** = Transverse direction, or direction perpendicular to the ribbon



## Availability

HexWeb® ACG® honeycomb will be shipped F.O.B. Casa Grande, Arizona. One of the major advantages of the HexWeb® ACG product line is the availability of a structural metallic honeycomb at low cost. The product is standard in one sheet size and is shipped untrimmed and expanded. Variations in T are available, while the L and W dimensions will be supplied in the standard expanded dimensions as shown. Custom L and W requirements or pieces cut to size can be supplied, but may carry a premium charge, depending on volume.

## Thickness Tolerances

Tolerances on cut thickness are as shown at right:

Sheet Thickness	Standard Tolerance
0.125 in to 3.999 in	± 0.008 in
4.000 in and over	± 0.062 in

## Density Tolerance

The standard density tolerance of the nominal density is ± 17%.

## Mechanical Properties

HexWeb® ACG® honeycomb has been tested per MIL-STD-401. The following typical properties apply:

Hexcel Honeycomb Designation  Material - Cell	Nominal Density pcf	Compressive			Crush Strength psi	Plate Shear			
		Bare Strength psi	Stabilized			L Direction		W Direction	
			Strength psi	Modulus ksi		Strength psi	Modulus ksi	Strength psi	Modulus ksi
ACG - 1/4	4.8	typ 630	typ 660	typ 148	typ 245	typ 365	typ 70	typ 215	typ 38
ACG - 3/8	3.3	340	370	92	120	230	45	130	22
ACG - 1/2	2.3	190	205	40	60	140	28	80	14
ACG - 3/4	1.8	120	130	24	45	100	20	65	11
ACG - 1	1.3	80	85	16p	25	65	14	45	7

Tested at 0.625 inch thickness.

## Important

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## For more information

Hexcel is a leading worldwide supplier of composite materials to aerospace and other demanding industries. Our comprehensive product range includes:

- Carbon Fiber
- RTM Materials
- Honeycomb Cores
- Continuous Fiber Reinforced Thermoplastics
- Carbon, Glass, Aramid and Hybrid Prepregs
- Structural Film Adhesives
- Honeycomb Sandwich Panels
- Special Process Honeycombs
- Reinforced Fabrics

For US quotes, orders and product information call toll-free 1-800-688-7734. For other worldwide sales office telephone numbers and a full address list please click here: <http://www.hexcel.com/contact/salesoffices>.